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By email to offshore.coordination@ofgem.gov.uk

Dear Ali

Consultation on the Early-Stage Assessment for Anticipatory Investment

We welcome the opportunity to respond to this consultation on the proposed Early-Stage Assessment (ESA) for Anticipatory Investment (AI).

Please note that this response represents the views of SSE Renewables (SSER); other companies within the SSE group or individual offshore wind projects within which SSE is a partner might submit a separate response.

SSER is the UK and Ireland's clean energy champion with plans to expand globally to deliver the green energy the world needs. Its strategy is to lead the transition to a net zero future through the world-class development, construction, and operation of renewable energy assets.

SSER is part of SSE plc, a UK-listed integrated energy group with a plan to invest £18bn between 2022 and 2027, or £10m a day, to deliver an upgraded Net Zero Acceleration Program Plus that addressed climate change head on. This includes plans by SSER to more than double its installed renewable energy capacity to 9GW by 2027 and an ambitious target to quadruple capacity to 16GW by 2032.

In addition to projects already under construction (for example, Dogger Bank A-C, which will be the largest offshore wind farm in the world once completed), SSER is currently developing, on its own or with its project partners, around 10GW of additional offshore wind capacity in Great Britain, with six projects within scope of the OTNR.

- Three Early Opportunities projects: Seagreen 1A (500MW, a JV with Total), Berwick Bank A-B (2.3GW), and North Falls (504MW, a JV with RWE); and
- Three Pathway to 2030 projects: Berwick Bank C (1.8GW) and Dogger Bank D (1.3GW, a JV with Equinor) included in the HND, and Ossian (3.6GW, a JV with Marubeni and CIP) included the HND FUE.

At SSER, we support the core objective of the OTNR to deliver future connections for offshore wind in a more coordinated way, whilst ensuring an appropriate balance between environmental, social, and economic costs and wider considerations.

For the OTNR to enable and support the achievement of the ambitious targets set by both UK and Scottish governments – respectively, 50GW (including 5GW floating) and 11GW by 2030 – we encourage Ofgem to adopt a pragmatic mindset in addressing the challenges of offshore coordination and to provide developers with the certainty they need to commit to unprecedented levels of investment.

Some of the proposals included in Ofgem’s consultation represent a welcome step forward towards providing this certainty, but others do not go far enough in removing the barriers that, historically, has prevented developers from undertaking AI for the benefit of other system users, while other proposals risk introducing new barriers.

Detailed feedback on all proposals included in Ofgem’s consultation is available in Appendix 1, where we provided responses to all five consultation questions.

One key area where, in our view, the consultation is lacking detail and more guidance is required to provide developers with a sufficient degree of certainty is in relation to the **criteria to be used to determine what parts or portions of the proposed shared infrastructure will be considered AI** (for the benefit of other developers or system users – the ‘later users’) **as opposed to non-AI** (for the benefit of the developer delivering the infrastructure – the ‘initial user’).

Since AI and non-AI items will be subject to different cost and benefit assessment frameworks (respectively, the new proposed ESA and the existing ex-post assessment framework already in use for radial connections subject to the OFTO regime), it is critical that the criteria used to determine the boundaries between AI and non-AI are defined clearly and applied consistently and equitably across different ESA applications.

Similarly, more guidance is required in relation to the **criteria to be used to identify the relevant later users for each section of a coordinated offshore system and determine how any AI delivered by the initial user will be apportioned between these later users**.

This is critical considering Ofgem’s proposed requirement that all relevant later users would need to approve and sign off any ESA application submitted on their behalf by an initial user.

The guidance described above might not be required where the proposed coordinated system is very basic, for example consisting exclusively of two offshore wind developers, with the one further away from shore (later user) connecting radially into an offshore platform delivered by the project closer to shore (initial user), with the power from both projects transmitted from this platform to shore via a shared cable classified as ‘non-radial offshore’, also delivered by the initial user.

Simplifying and assuming both projects had a capacity of 500MW, the combined cost of the required 1GW offshore platform and cable from this platform to shore (for example, £1bn) could be split equally between an AI portion for the benefit of the later user (£500m) and a non-AI portion for the benefit of the initial user (£500m).

However, in practice, there will be coordinated offshore transmission systems, like those off the East Coast of Scotland and England that the ESO has outlined in the HND and proposed for the HND FUE, that will be significantly more complex, with multiple large offshore hubs connected both to each other

and to multiple onshore landing points, through a combination of radial, non-radial, and 'onshore' transmission assets, delivered by a combination of developers and TOs, and with a dual purpose of both exporting power from multiple generators and providing system congestion relief by reinforcing the onshore transmission network.

An additional complexity that Ofgem should consider, and which is directly relevant to one of our key projects, is the fact that the largest projects are likely to be delivered in phases, with earlier phases effectively delivering AI for the benefit of later phases. In this scenario, it is not clear whether and how Ofgem's AI policy and ESA process would apply where the initial user and one or more of the later users of a shared infrastructure are phases of the same project.

Ofgem should consider developing a suite of worked examples showing how it intends the proposed ESA process to work in practice across a range of different possible configurations. This would help developers involved in the delivery of complex offshore systems better understand Ofgem's intent while helping Ofgem better understand some of the practical challenges faced by developers.

For complex offshore networks, determining boundaries between AI and non-AI, identifying the relevant later users, and apportioning costs between these later users for all required transmission assets (both subsea cables and all relevant electrical equipment installed on the offshore platforms) is unlikely to be straightforward and proposals submitted by different developers might differ in the proposed approach.

Issues in relation to the classification and apportionment of AI and the identification of relevant later users are of critical importance because they have significant implications for other critical areas of the broader regulatory framework for offshore coordination; for example, sizing the securities that later users will be asked to commit to meet user commitment requirements and calculating TNUoS charges for both initial and later users.

Ofgem should provide guidance to ensure consistency in the assessment of different ESA applications and the preservation of a level playing field between all developers involved in the delivery of different parts of the wider offshore transmission network.

One potential allocation approach could involve using the power flows forecasted by the ESO through the modelling exercise already undertaken to optimise the HND and HNDFUE designs also to determine, for each transmission asset, a split between AI and non-AI portions and the allocation of the AI portion between any relevant later users expected to use that asset.

This modelling will only be available for Pathway to 2030 projects included in the HND and HNDFUE (as well as projects included in any future iterations of the HND), but a similar modelling exercise could be undertaken by the initial user (and signed off by the relevant later users) for any Early Opportunities projects proposing a coordinated design.

In addition to the feedback presented above, in Appendix 1 we provide responses to the five questions included in Ofgem's consultation. In summary, key areas where we think further guidance is required to deliver a suitable regulatory framework for AI include the need to:

- Establish a formal process to resolve situations where initial and relevant later users fail to reach an agreement on the content of the initial user's ESA submission.
- Consider the possibility that the initial user might not just be delayed, but drop off entirely from the proposed coordinated network, and the implications that this would have for the later user(s) asked to pick up the initial user's original ESA application.
- Minimise (to the extent possible) the sharing of confidential and commercially sensitive information between developers.
- Define what exactly 'deviating from the HND' means in practice if, as proposed, developers that are considered to have deviated from the HND in their ESA submission would be required to produce additional analysis in support of their proposals.
- Clarify the applicability of the proposals included in Ofgem's consultation to projects involving one or more TOs alongside offshore wind developers, and the interaction between the proposed ESA and the TOs' network price controls.
- Consider aligning thresholds for material changes affecting an ESA application with the thresholds for unforeseen cost increases included in the existing cost assessment process for radial connections subject to the OFTO regime.
- Consider whether and how it might be possible to adapt the existing cost assessment approach for radial connections (underpinned by a benchmarking exercise) to overcome the lack of relevant direct comparators for first-of-a-kind highly coordinated offshore transmission systems, or whether a new and different cost assessment approach will be required.
- Reconsider the proposed requirement for an ex-post re-opener for projects with outturn costs exceeding Ofgem's approved ESA allowance by more than 5%, as this is an extremely low threshold, which is inconsistent with the early development stage at which projects can be expected to submit an ESA application.
- Following completion of the ESA, alongside a cost figure for the purpose of calculating user commitment arrangements, consider providing to the ESO also an estimate of the risk of stranded assets and the likelihood of asset reuse by potential future users.

We would welcome the opportunity to discuss further with Ofgem the content of our response in a follow-up meeting.

We would also welcome the opportunity to arrange, where useful, separate bilateral meetings between Ofgem and our projects that are most impacted by Ofgem's proposals on ESA and AI more in general, to discuss in greater detail some of the practical implications of these proposals at project's level.

We look forward to continuing engaging with Ofgem over the coming months to support the development of an AI framework that enables the industry to meet the ambitious offshore wind targets set by the UK and Scottish governments.

Yours sincerely,

Martin Namor

Senior Regulation Manager, Renewables

Appendix 1 – Detailed responses to consultation questions

Question 1: Do you agree that the later user should assume responsibility for the construction of the coordinated solution should the initial user become delayed?

In principle, we agree with the proposal that a later user should assume responsibility for the delivery of the coordinated solution should the initial user become delayed, but also for the delivery of an alternative coordinated solution should the initial user pull out entirely (in those cases where the coordinated solution involved multiple later users).

We also agree with the proposal for later users to formally confirm their commitment by signing off the ESA application submitted on their behalf by the initial user, confirming their approval of the AI proposals and acknowledging responsibility for stepping in, if required.

However, it is currently unclear what would happen if initial and later users failed to reach an agreement on the AI proposals to be submitted to Ofgem as part of an ESA application. As suggested in our responses to previous consultations, we think that there should be a back-stop procedure for resolving disputes between developers and, where applicable, TOs. We suggest that Ofgem puts in place a clear and transparent procedure to resolve situations where agreement cannot be achieved, as prolonged disputes might impact and delay the development, consenting, and construction of projects that are critical to meeting the targets set by the UK and Scottish governments.

If the initial user acting as lead ESA applicant is unable to provide a letter with sign off from later users acknowledging agreement, the initial user should provide Ofgem with a detailed explanation as to why this is the case, together with any supporting documentation that it considers relevant. Based on the evidence provided, Ofgem should act as a mediator and assist with resolving the dispute through the back-stop procedure described above.

As mentioned in the first paragraph, Ofgem should also consider the possibility that the initial user might not just be delayed but pull out entirely and therefore drop off from the proposed coordinated design. This could have significant implications for the later users if they were asked to pick up the initial user's original ESA application. In this scenario, a later user should have the flexibility to amend the AI proposals included in the original application. This flexibility should apply to the technical design but also the cost figures previously agreed in principle between the initial user and Ofgem as part of Ofgem's ESA process.

Finally, as suggested in our responses to Ofgem's previous consultations, we think that Ofgem should also act, or instruct another relevant organisation (for example, the ESO) to act, as a central holder of relevant project information to minimise direct sharing of confidential information between developers, to preserve a level playing field between competing projects (for example, in CfD auctions and supply chain procurement).

Question 2: Do you have any views on the Draft Early-Stage Assessment Guidance Document?

In relation to the ESA eligibility criteria, we suggest that the requirement to hold a valid and enforceable Agreement for Lease (AfL) is extended to include either an AfL or a Lease. In some cases, a project might have a valid and enforceable Lease in place without having had a previous AfL. For example, such circumstances apply to one of our projects.

Regarding the proposed Cost Benefit Analysis (CBA), options analysis, and qualitative benefits analysis, it seems sensible that these should only be required for projects that deviate from the original HND(FUE) design. However, this would require a clear definition of what 'deviating' from the HND(FUE) means; for instance, whether it means deviating from the power flow map underpinning the ESO's original design; deviating from the voltage, rating, etc. originally proposed for different parts of the system; or something else.

Therefore, we would welcome clarification on the intended meaning of 'deviating' from the HND(FUE). Developers will require from Ofgem and the ESO either:

- A commitment to a broad interpretation of what being in line with the HND(FUE) means (which seems reasonable considering this was intended as an early-stage, high-level design); or
- A very well-defined baseline against which to perform the proposed additional analysis for this analysis to be accurate and meaningful.

In addition, we request that where, following in-depth analysis by the relevant users (including both developers and TOs), part of the HND(FUE) design is deemed not deliverable in its original form, an exemption should apply to allow these users to deviate from the original design without the need to undertake a new detailed CBA analysis.

Regarding the broader ESA guidance document, we note that, in its current form, it does not include a sufficient level of detail to allow prospective applicants to fully understand how the ESA process would apply to complex coordinated designs such as those described on pages 2 and 3 of this consultation response.

For example, based on the six short-listed HND(FUE) designs that the ESO shared with the relevant developers in February 2023, some projects (especially those included in the eastern section) expect to be highly interconnected, with multiple connections both to shore and to other projects. Under such circumstances, it is not entirely clear how the ESA might work in practice. For instance, in relation to transmission assets with multiple later users (both offshore wind generators and TOs); or large projects requiring two or more offshore platforms to be delivered at different stages (where it is unclear whether multiple and separate ESA applications would be required).

Moreover, the guidance document does not currently explicitly address a scenario involving one or more TOs, either as initial or later users of the shared infrastructure being developed. Some sections of the ESO's proposed HND and HND(FUE) include complex designs where different sections are expected to be delivered by different entities. We would welcome clarification as to how the ESA will apply to those sections where a TO is involved (either as initial or later user).

The technical assessment section of the ESA guidance document seems light on details. It includes the requirement for applicants to submit a description of the assets and a detailed cost breakdown but

does not define the criteria to be used to classify different parts of the proposed infrastructure as either AI or non-AI. Clarity is required from Ofgem on what criteria are to be used to define AI. Otherwise, applicants risk submitting proposals that they consider justifiable but might subsequently end up being assessed as not cost-efficient by Ofgem. This could cause delays to the development, consenting, and construction of projects that are critical to meeting government targets.

Another key concern that we have already raised in our responses to previous consultations is data confidentiality. The initial user in charge of developing and building the shared infrastructure may be reluctant to share, or prevented from sharing, information deemed confidential and commercially sensitive with the relevant later users. As a result, it might be difficult for these later users to agree on, and sign off, the initial user's AI proposals included in the ESA application based on their limited access to the underlying technical specifications and cost breakdowns.

The sharing of confidential and commercially sensitive information could cause significant issues for future competitive auctions and may not be allowed under commercial agreements already signed with equipment suppliers, who are keen to protect their commercial interests and intellectual property.

Projects in the position of initial and later users of the same shared infrastructure might be competing against each other in future CfDs auctions or to secure contracts with the supply chain, and sharing commercially sensitive information might compromise the level playing field and impact competition.

As suggested in our response to Question 1, we think that Ofgem should act, or instruct another relevant organisation (for example, the ESO) to act, as a central holder of relevant project information to minimise direct sharing of confidential and commercially sensitive information between developers.

Finally, at the end of the ESA process, in addition to estimating and providing to the ESO the AI cost figures required to calculate user commitments for any relevant later users, we suggest that Ofgem should also quantify the risk that assets might become stranded where one or more of the original users decided to pull out or the likelihood that other future users might be able and willing to use those assets further down the line.

Question 3: Do you have any views on what should constitute material change for projects?

One approach to defining materiality could involve aligning, where relevant, thresholds for material change under the ESA process with thresholds for unforeseen changes under the existing cost assessment process for radial connections under the OFTO regime.

Since, under Ofgem's ESA proposals, projects exceeding a predetermined overspend threshold would subsequently be subject to the existing ex-post cost assessment process, Ofgem should consider to what extent the specifics of the two assessment processes should be aligned for consistency.

We would welcome the opportunity to discuss the issue of materiality in greater detail as part of a follow-up meeting once you have had the opportunity to review our consultation response.

Question 4: Do you agree with Ofgem’s proposed approach to projects which experience material change?

Ofgem’s proposals suggest that the threshold for material change would be considered against the potential impact of the change on the needs case and expected consumer benefit on a project-by-project basis and the determination for one project should not be considered a precedent in determining materiality for future projects.

In the absence of further details, the proposed approach would not provide developers with the clarity and certainty required to understand when and how they might be subject to an ESA re-opener. This would be a barrier which could potentially prevent developers from committing to pursuing coordination (in the case of Early Opportunities projects) or place them at a significant disadvantage relative to other projects or to a radial counterfactual.

As mentioned in response to Question 3, we would welcome the opportunity to discuss the issue of materiality in greater detail as part of a follow-up meeting once you have had the opportunity to review our consultation response.

Question 5: Do you agree with Ofgem’s proposed approach to cost disallowances in Anticipatory Investment?

Ofgem’s proposed approach to early-stage cost assessment, as outlined in the guidance document published alongside the consultation, would involve adopting the same cost assessment principles underpinning the existing OFTO cost assessment process for radial connections. Under the proposed approach, Ofgem would benchmark the applicant’s cost submission against costs observed in a set of relevant comparators.

However, the highly interconnected transmission systems outlined by the ESO in the HND and proposed for the HNDFUE would be first-of-a-kind, not just in the UK but globally, in terms of the complexity of their configuration, involving multiple offshore platforms (hosting a range of electrical equipment including substations, switchgear, converters) connected both with each other and to multiple onshore substations.

This is especially relevant for HVDC systems, which have only recently started being deployed to connect offshore wind projects radially (with Dogger Bank A, currently under construction, the first project using HVDC technology in the UK). HVDC interconnectors and bootstraps could represent relevant comparators to a limited extent, but only in relation to transmission cables, as they do not include offshore substations to switch voltage and convert current between AC and DC.

Ofgem should be flexible in its approach to cost assessment to reflect the differences between HVDC and HVAC and ensure that projects using HVDC are not unfairly penalised relative to those using HVAC. The supply chain for HVDC technology is limited and currently underdeveloped relative to global demand and this has implications in terms of both its availability and cost.

Early engagement with HVDC providers suggests that, due to demand exceeding existing supply chain capacity globally, these providers are reluctant to engage in lengthy and burdensome procurement

tenders. This could impact the cost at which developers can secure the required equipment and associated services but also their ability to demonstrate to Ofgem compliance with 'economic and efficient' criteria, as currently defined for the existing OFTO cost assessment process.

Therefore, the benchmarking approach historically adopted by Ofgem for the cost assessment of HVAC transmission systems is unlikely to be directly applicable to HVDC systems. We would welcome the opportunity to hold a dedicated workshop with Ofgem to discuss how the existing approach could be adapted to better reflect the specific features of HVDC systems.

In relation to the proposed requirement for an ex-post re-opener for projects with outturn costs exceeding Ofgem's approved ESA allowance by more than 5%, we consider this threshold to be extremely low and inconsistent with the early development stage at which projects would be likely to submit an ESA application. A 5% threshold could, on its own, represent an unsurmountable barrier to AI.

There is a trade-off between the stage of development at which a developer can submit an ESA application and the level of confidence it can attach to its cost estimates. To minimise the risk of breaching such a low threshold, developers might have to postpone submitting their ESA application until the final stages of development.

Besides this being inconsistent with the concept of an early-stage assessment, it might also result in developers spending years refining detailed AI proposals only for Ofgem to reject them close to FID. Moreover, the risk of such an outcome materialising could itself deter developers from committing to any AI proposals in the first place, or increase the risks and costs associated with raising finance to deliver those proposals, resulting in lower benefits and/or higher costs for consumers.

We recommend that Ofgem reconsiders the proposed threshold and wider approach to setting such a threshold, for example by considering whether, rather than one fixed threshold applying irrespective of when a developer submits an ESA application, this threshold could be variable based when the application is submitted. It could start much higher for projects in the earlier stages of development and reduce progressively towards 5% as projects enter the final stages of development and approach FID.

Finally, we are not clear on the rationale for Ofgem's proposed 10% underspend threshold, as lower costs would benefit consumers. We would welcome a clarification as to why an underspend threshold is required.

Appendix 2 – Glossary

AC	Alternating Current
AfL	Agreement for Lease
AI	Anticipatory Investment
CBA	Cost Benefit Analysis
CfD	Contract for Difference
CIP	Copenhagen Infrastructure Partners
DC	Direct Current
ESA	Early-Stage Assessment
ESO	Electricity System Operator
FID	Final Investment Decision
HND	Holistic Network Design
HNDFUE	Holistic Network Design Follow-Up Exercise
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
JV	Joint Venture
OFTO	Offshore Transmission Owner
OTNR	Offshore Transmission Network Review
SSER	SSE Renewables
TNUoS	Transmission Network Use of System